



Montana Fish, Wildlife & Parks

*Region Three
1400 South 19th
Bozeman, MT 59718*

Environmental Quality Council
Montana Department of Environmental Quality
Montana Department of Fish, Wildlife and Parks
Fisheries Division
Endangered Species Coordinator
Native Species Coordinator, Fisheries
R3 Bozeman Office

July 13, 2016

Montana State Library, Helena
MT Environmental Information Center
Montana Audubon Council
Montana Wildlife Federation, P.O. Box 1175, Helena, MT 59624
Beaverhead Conservation District, 420 Barrett Street, Dillon, MT 59725
U.S. Army Corps of Engineers, Helena
U.S. Fish and Wildlife Service, Ecological Services, Helena
U.S. Fish and Wildlife Service, Partners for Fish and Wildlife, 420 Barrett St., Dillon, MT 59725
State Historic Preservation Office, Helena

Ladies and Gentlemen:

Enclosed is an Environmental Assessment (EA) prepared by the Montana Fish, Wildlife & Parks (FWP). This EA is for a stream channel restoration project located on an altered reach of Alkali Creek, a tributary to East Fork Blacktail Deer Creek, located approximately 32 miles southeast of Dillon within Beaverhead County. The project site is located on the Gravelly-Blacktail Wildlife Management Area.

Please submit any comments by 12 August 2016 at 5:00 pm to Montana Fish, Wildlife & Parks at the address listed above. If you have any questions, feel free to contact Matt Jaeger at (406) 683-9310. Please note that this draft EA will be considered as final if no substantive comments are received by the deadline listed above.

Sincerely,

Sam B. Sheppard
Region Three Supervisor

c: Matt Jaeger

Attachment

ENVIRONMENTAL ASSESSMENT

Fisheries Division Montana Fish, Wildlife & Parks Alkali Creek Incised Channel Restoration Project

General Purpose: Alkali Creek restoration will enhance floodplain connection, wetland vegetation, and aquatic habitat, as well as serve as a research experiment by Montana State University to understand hydrologic effects of wetland restoration.

I. Location of Project:

This project will be conducted on Alkali Creek, a tributary to East Fork Blacktail Deer Creek, located approximately 32 miles southeast of Dillon, within Township 11 South, Range 5 West, Section 20, Beaverhead County (Figure 1). The project site is located on the Gravelly-Blacktail Wildlife Management Area (G-B WMA).

II. Need for the Project:

One goal within FWP's six-year operations plan for the fisheries program is to "protect, maintain and restore native fish populations, their habitats, life cycles, and genetic diversity to ensure stewardship of native species." Alkali Creek has a known population of Westslope cutthroat trout that was sampled by FWP as recently as June 2016. The project area is in a valley bottom which historically was inundated by a reservoir (that has been dismantled for several decades). The creek through this valley reach has become moderately incised as the stream cut down through reservoir sediments and the riparian communities present are far under potential relative to up and downstream reaches unaffected by the reservoir pool.

The project's intent is to restore the stream channel to a condition where it is fluvially and hydrologically reconnected to the valley floor floodplain. The work will increase the heterogeneity of instream habitat; increase base flow water column depth; develop flood flow channels, backwaters, and wetlands. Anticipated changes to the floodplain include a significant increase in native woody riparian vegetation through natural regeneration and planting efforts. Increasing wetland and riparian health will benefit a wide range of flora and fauna associated with this ecosystem.

This project will demonstrate low-cost and low-impact restoration techniques for small incised channels which are abundant in the G-B WMA. As such, baseline surface and groundwater hydrology, temperature, fisheries and aquatic macroinvertebrate base-lines were established in spring 2016 by FWP biologists and Montana State University researchers. Multi-year post-project monitoring will help define the project impacts/benefits useful for assessing other similar projects in the future.

III. Scope of the Project:

The project involves the installation of six grade controls distributed over approximately 3,000 feet of channel. The grade controls will be constructed with site harvested donor sod mats layered with dormant willow stems and brush. These structure types are purposely designed to be deformable over a period of years and fully re-integrated/biodegradable in the environment when their life-spans have been exceeded. Trial work with sod

structures in other areas suggest that the structures will have a lifespan of 3-7 years. This period of persistence could be increased by colonization of the reach by beaver which maintain an active complex just upstream of the project area. Annual monitoring of structure performance will provide valuable information on the functionality of these structure types for future projects.

The existing channel has an average bankfull topwidth of 7.2 feet and a depth of approximately 4.5 feet. The existing banklines are tightly held by riparian/wetland grasses and sedges. Given the small channel size, individual grade control structures are modest in size and typically composed of 4-5 layers of 1-foot thick sod mats harvested from the adjacent valley floor within reach of an excavator. Once the core structures are built, sod mats will be utilized to create a low flow channel of approximately 3-4 foot width. The backwaters behind the structures will be within approximately 0.5 feet of the existing top of banks at the structure and decrease to natural elevations as the backwater meets natural grade. The average backwater area affected by a single structure is 450 feet. The structures will be spaced such that the backwaters are separated by 1-300 feet of channel uninfluenced by backwater.

Runoff and low-flow water elevations will be raised through the installation of the structures. The structures increase floodplain connectivity. Overbank side-channel areas will be re-activated, but baseflows will remain in current channel for fish and aquatic species to migrate year-round. The G-B WMA is not currently grazed by livestock. The overall goal is to re-establish a self-maintaining floodplain environment that would result in an improved and more resilient ecological condition for Westlope cutthroat trout and wildlife that utilize wetland and riparian habitats, including moose, bear, birds, and western toad. This project is expected to cost \$7,000 (monitoring activities not included though funded through other means).

A one tracked, low-ground pressure, hydraulic excavator will access the site via an existing two-track road that is seasonally open. All materials for the project will be site harvested (sod donor mats and willow stems/brush). The project is expected to require a total of three days of onsite work including mobilization and demobilization of the excavator. All surface disturbance will be reclaimed prior to demobilization.

Contributor	In-kind services	In-kind cash
The Nature Conservancy with Wildlife Conservation Society Climate Adaption Fund		\$7,000

V. Environmental Impact Review Checklist:

Evaluation of the impacts of the Proposed Action including secondary and cumulative impacts on the Physical and Human Environment

Project Title: Alkali Creek Incised Channel Restoration Project

Division/Bureau: Fisheries Division

Description of Project: This project will be conducted on Alkali Creek, a tributary to East Fork Blacktail Deer Creek, located approximately 32 miles southeast of Dillon, within Township 11 South, Range 5 West, Section 20, Beaverhead County (Figure 1). The project site is located on the Gravelly-Blacktail Wildlife Management Area (G-B WMA).

The project proposes to install six grade controls distributed over approximately 3,000 feet of channel. The

grade controls will be constructed with site harvested donor sod mats layered with dormant willow stems and brush. These structure types are purposely designed to be deformable over a period of years and fully re-integrated in the environment when their life-spans have been exceeded.

A. POTENTIAL IMPACTS TO THE PHYSICAL ENVIRONMENT

Will the proposed action result in potential impacts to:	Unknown	Potentially Significant	Minor	None	Can Be Mitigated	Comments Provided
1. Geology and soil quality, stability and moisture				X		
2. Air quality or objectionable odors				X		
3. Water quality, quantity and distribution (surface or groundwater)			X			X
4. Existing water right or reservation				X		
5. Vegetation cover, quantity and quality			X			X
6. Unique, endangered, or fragile vegetative species				X		
7. Terrestrial or aquatic life and/or habitats			X			X
8. Unique, endangered, or fragile wildlife or fisheries species			X			X
9. Introduction of new species into an area				X		
10. Changes to abundance or movement of species			X			X

B. POTENTIAL IMPACTS ON THE HUMAN ENVIRONMENT

Will the proposed action result in potential impacts to:	Unknown	Potentially Significant	Minor	None	Can Be Mitigated	Comments Provided
1. Noise and/or electrical effects				X		
2. Land use				X		
3. Risk and/or health hazards				X		
4. Community impact				X		
5. Public services/taxes/utilities				X		
6. Potential revenue and/or project maintenance costs				X		
7. Aesthetics and recreation				X		
8. Cultural and historic resources				X		X
9. Evaluation of significance				X		
10. Generate public controversy				X		

V. Explanation of Impacts to the Physical Environment

3. Water quantity, quality and distribution.

No significant changes in streamflow are expected to occur in Alkali Creek as a result of the proposed project. However, Montana State University will measure streamflow, temperature and groundwater levels to better understand short and long-term effects of incised channel restoration on water quantity. Short-term increases in turbidity may occur during project construction. To reduce turbidity, operation of equipment in the stream channel will be minimized to the extent practicable. The Department of Environmental Quality will be contacted to determine narrative conditions required to meet short-term water quality standards and protect aquatic biota (318 authorization).

5. Vegetation cover, quantity and quality.

Riparian vegetation will be disturbed by localized equipment use near structures, but will be minimized by using small equipment on dry soils. Proposed re-vegetation efforts will result in a significant overall improvement to the riparian vegetative community after one year.

7. Terrestrial and aquatic life and habitats.

Construction activities affecting terrestrial and aquatic life habitats will be short term and would be confined to the project area (stream and floodplain). The mobilization and use of equipment and installation of grade controls and hardened riffles is expected to disturb habitat temporarily. However, proper permits will be obtained, disturbed habitat will be repaired and overall habitat will be improved. Willows will be planted. Overall, project activities are expected to improve aquatic and floodplain habitat, thereby enhancing the resident fishery in Alkali Creek. Improved floodplain function will be beneficial for aquatic, riparian and terrestrial life.

8. Unique, endangered or fragile wildlife or fisheries species.

A species search was requested and wildlife data was provided by the Montana Natural Heritage program on June 30, 2016. The search indicated that this section of Alkali Creek supports Westslope cutthroat trout, classified as federally sensitive and a Species of Concern in Montana. Restoration of the stream and floodplain, as part of this project, would augment the usable habitat for this species and contribute to its recovery.

The WMA also supports a known population of greater sage grouse (classified as federally sensitive and a Species of Concern in Montana). The sage grouse use the area for breeding and nesting. This will not change the non-impact of the proposed project, as the disturbance at the project site will be mainly limited to the stream channel and banks of Alkali Creek.

Wolverines (classified as federally sensitive and a Species of Concern in Montana) are also listed as having habitat within the WMA but these species are highly unlikely to occur within the limited area of the riparian stream corridor along Alkali Creek.

10. Changes to abundance or movement of species.

Restoration of Alkali Creek is expected to increase the abundance of Westslope cutthroat trout, which is considered a positive impact.

VI. Explanation of Impacts to the Human Environment

8. Historical and archaeological sites

No cultural or historical resource impacts are anticipated. However, an archaeologic survey was conducted on July 7, 2016, the State Historical Preservation Office will be consulted, and any potential concerns will be addressed.

VII. Narrative Evaluation and Comment.

There are no anticipated cumulative effects.

VIII. Discussion and Evaluation of Reasonable Alternatives.

1. No Action Alternative.

If no action is taken at the project site, Alkali Creek will remain a moderately incised stream and the aquatic habitat and riparian communities will continue to decline over time. The “No Action” alternative would be especially detrimental to the native Westslope cutthroat trout population in Alkali Creek. The “No Action” alternative would also not be in line with FWP’s goal to “protect, maintain and restore native fish populations, their habitats, life cycles, and genetic diversity to endure stewardship of native species.”

2. The Proposed Alternative.

The proposed alternative intends to restore the stream channel to a condition where it is fluvially and hydrologically reconnected to the valley floor floodplain. The work will increase the heterogeneity of instream habitat; increase base flow water column depth; develop flood flow channels, backwaters, and wetlands. Anticipated changes to the floodplain include a significant increase in native woody riparian vegetation through natural regeneration and planting efforts. Increasing wetland and riparian health will benefit a wide range of flora and fauna associated with this ecosystem.

IX. Environmental Assessment Conclusion Section.

1. Other groups or agencies contacted or which may have overlapping jurisdiction:

- Beaverhead Conservation District
- U.S. Army Corps of Engineers

- MT Department of Environmental Quality

2. Evaluation and listing of mitigation, stipulation, or other control measures enforceable by the agency or another government agency:

None

3. Is an EIS required?

No. We conclude, from this review, that the proposed activities will have an overall positive impact on the physical and human environment, and will therefore not require the extensive analysis associated with an EIS.

4. Level of public involvement.

The public will be notified in the following manners to comment on this EA, the proposed action and alternatives:

- Two public notices in each of these papers: Helena Independent Record and the Bozeman Daily Chronicle
- One statewide press release
- Public notice on the Fish, Wildlife & Parks web page: <http://fwp.mt.gov>.

This level of public notice and participation is appropriate for a project of this scope having limited impacts, many of which can be mitigated.

5. Duration of comment period?

The public comment period will extend for (30) thirty days. Written comments will be accepted until 5:00 p.m., August 12, 2016 and can be mailed or emailed to the addresses below:

6. Person(s) responsible for preparing the EA.

Matt Jaeger, Fisheries Management Biologist
Montana Fish, Wildlife & Parks
730 1/2 N. Montana
Dillon, MT 59725
Telephone: (406) 683-9310, E-mail: mattjaeger@mt.gov

and

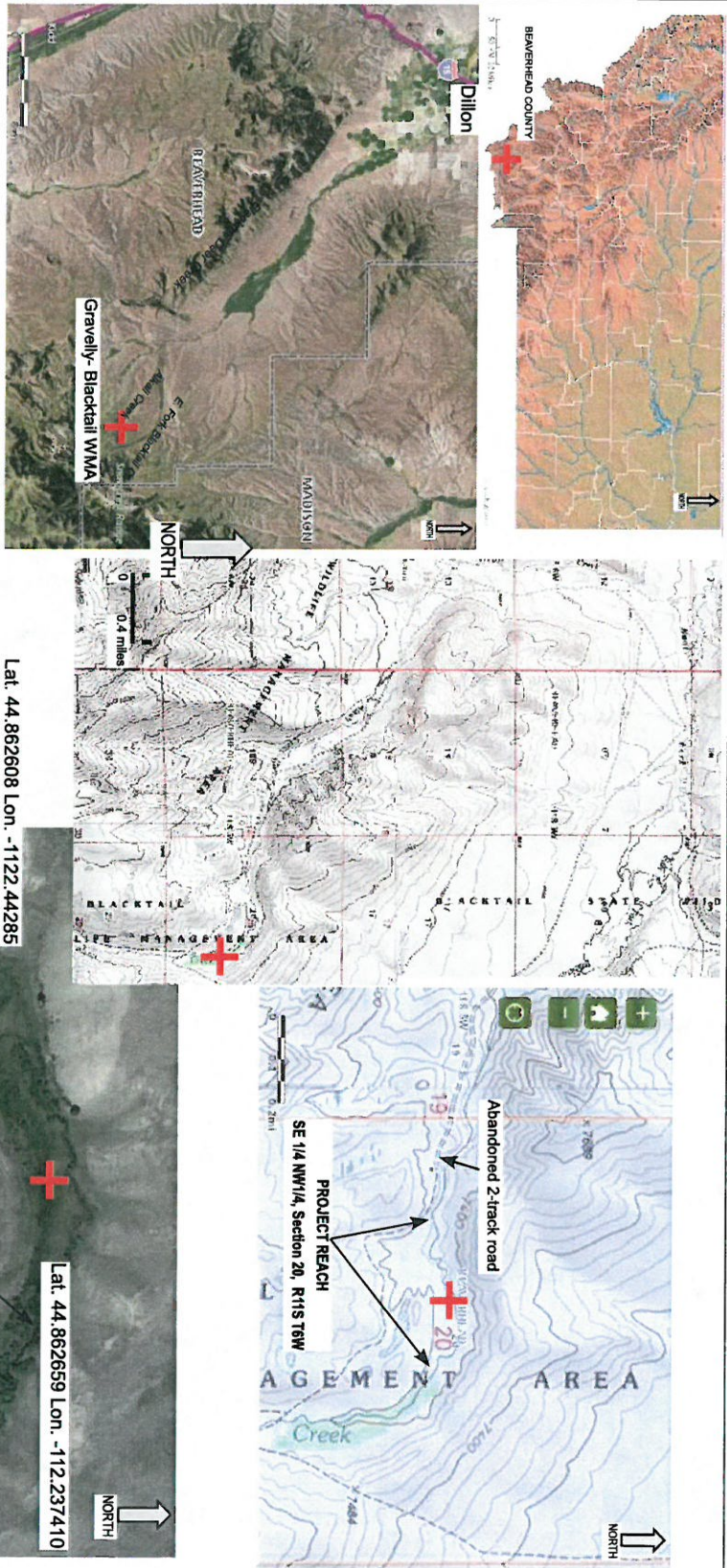
Sierra Harris, Freshwater Conservation Project Manager
The Nature Conservancy
40 E. Main Street, Suite 200
Bozeman, MT 59715
Telephone: (406) 602-4148, E-mail: sierra.harris@tnc.org



FIGURE 1: Project Location



PROJECT AREA AND REACH LOCATION

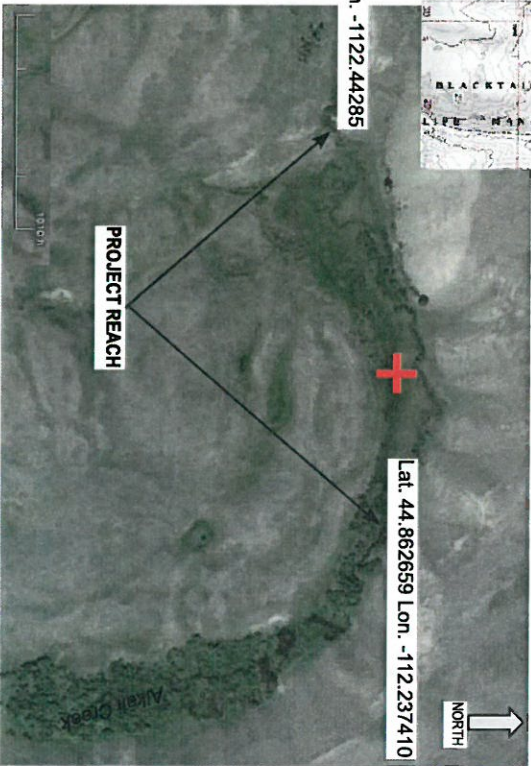


DRIVING DIRECTIONS:

From Dillon, State Hwy 191S to Blacktail Rd for 27 miles to junction with E Fork Blacktail Road. Take E. Fork Blacktail Rd for 5.34 to junction with Alkali Creek Rd. Head south over bridge 0.1 miles and immediately bear right (SW) on 2-track Alkali Creek Rd. Follow creek for 3.5 miles to jacking fence blocking road. Proceed 0.67 miles on foot over abandoned 2-track to bottom of project site.

Lat. 44.862608 Lon. -112.44285

Lat. 44.862659 Lon. -112.237410



Alkali Creek Incised Channel Restoration Project

Prepared for: Montana Office The Nature Conservancy

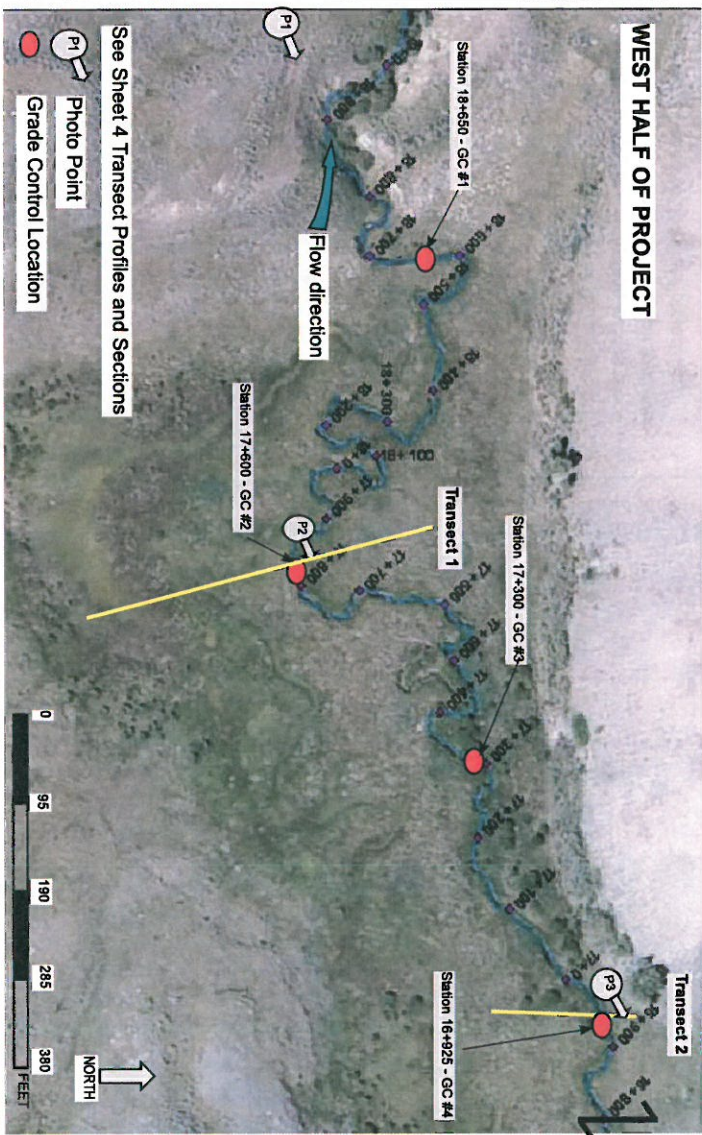
Prepared 2.20.16 by Scott Gillilan, Gillilan Associates

SHEET 104



EXISTING CONDITIONS AND PROPOSED GRADE CONTROL STRUCTURE LOCATIONS

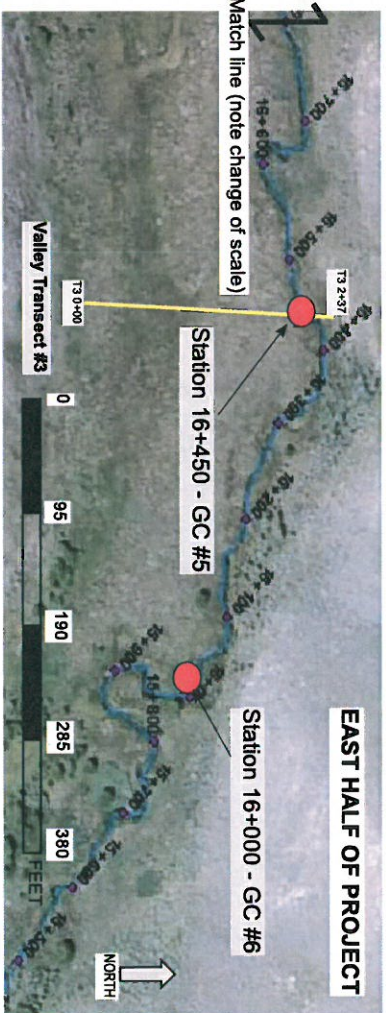
WEST HALF OF PROJECT



EXISTING CONDITIONS SUMMARY

1. Baseflow $Q = 3.4$ cfs; $Q2 = 10-14$ cfs; contributing watershed area = 5.85 miles.
2. Average channel slope = 0.30%
3. Project reach length = 3,000 LF (STA 18+650 - 15+650).
4. Riparian area largely devoid of shrubs.
5. Bed substrate is gravel < 0.5 inches, sand and silt.
6. Average bankfull width = 7.2 feet.
7. Field indicators suggest $Q2$ does not access floodplain; channel is moderately incised.

EAST HALF OF PROJECT



Alkali Creek Incised Channel Restoration Project

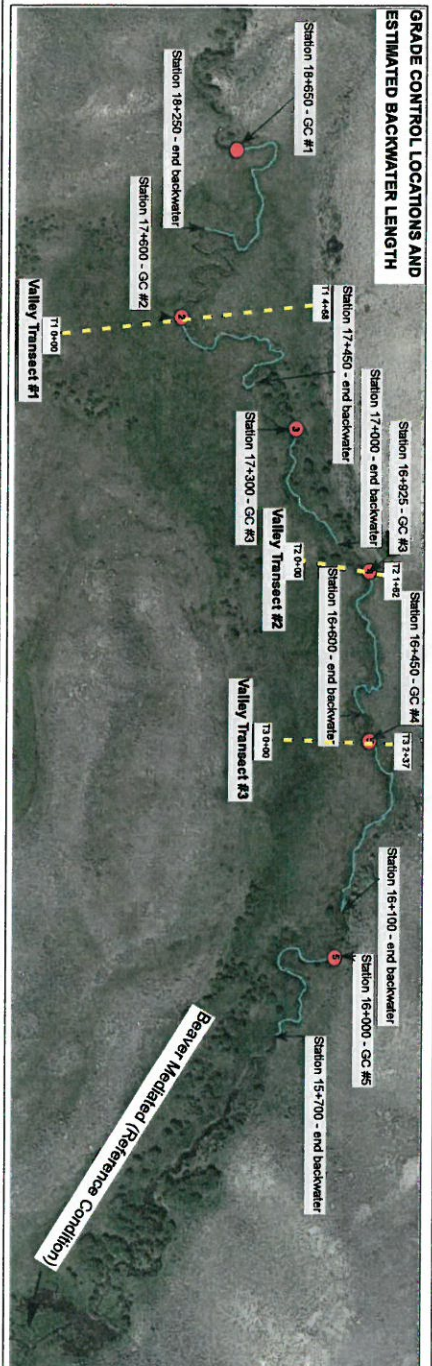
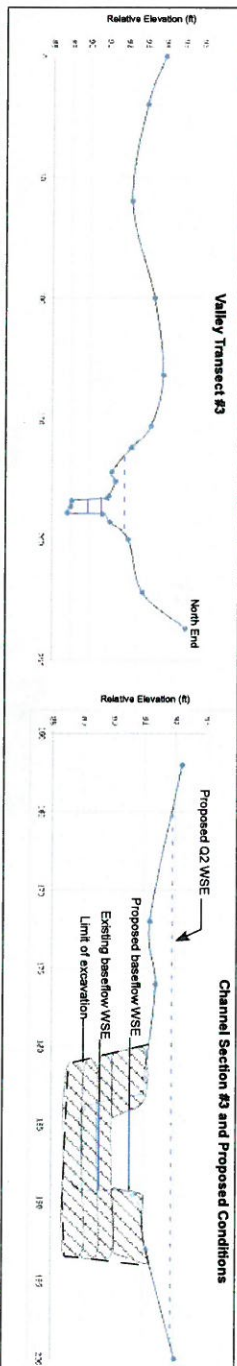
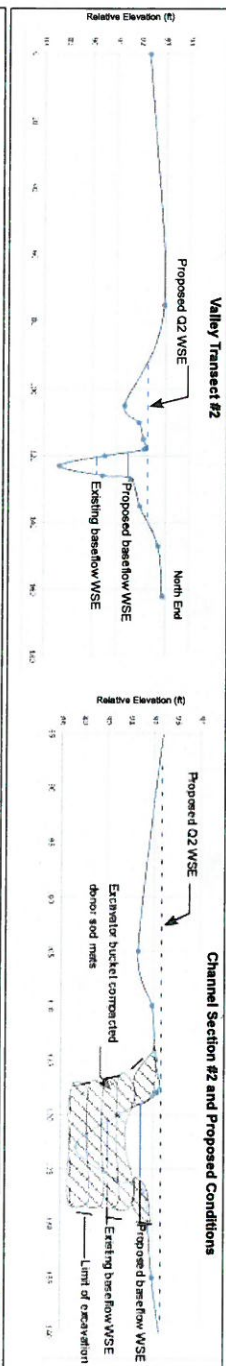
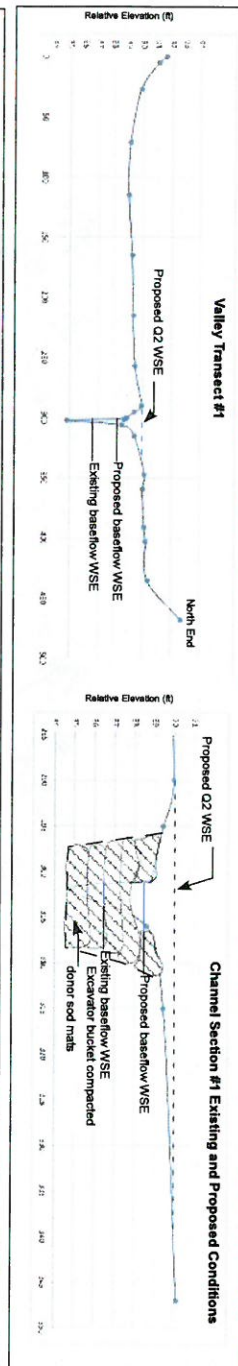
Prepared for: Montana Office The Nature Conservancy

Prepared 2.20.16 by Scott Gillilan, Gillilan Associates

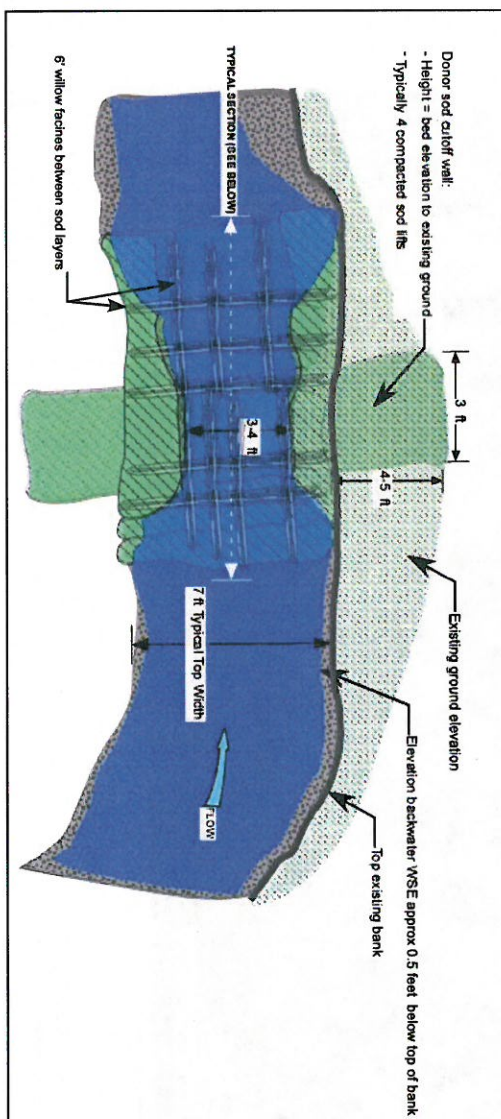
SHEET 3 of 4



EXISTING
1. Baseflow
2. Average
3. Project re

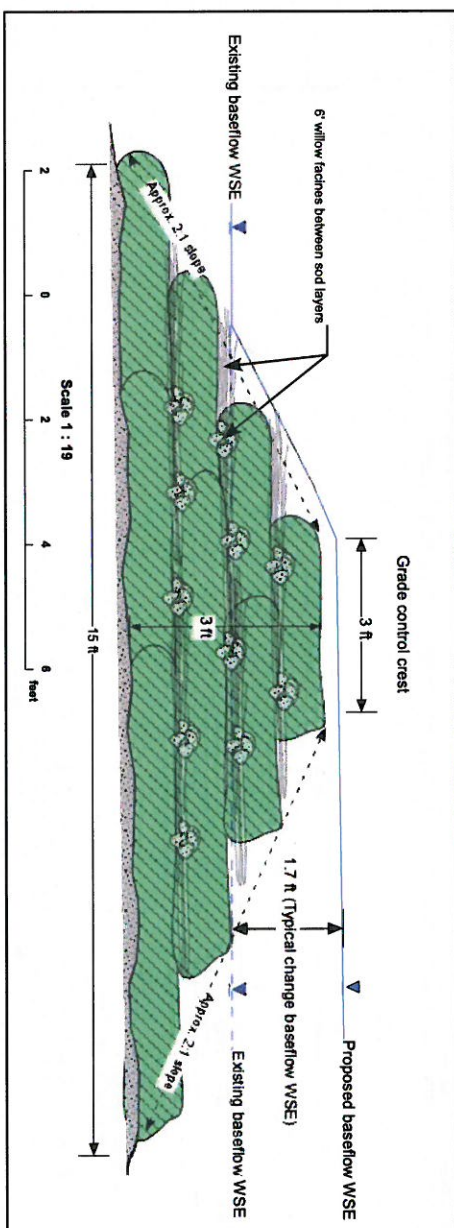


PLANVIEW OF TYPICAL SOD AND WILLOW/BRUSH FASCINE GRADE CONTROL STRUCTURE



- Average Sod Quantity Per Structure - 312 sf/11.6 CY
- Total Sod Quantity (5 Structures) - 1,560 sf/57.8 CY
- Sod Source - Inundated banklines or proximate to excavator reach.
- Harvest Method - excavator, mosaic harvest with simultaneous reclamation.
- 12-18 fascines/structure
- Facine source - site harvested

TYPICAL PROFILE SECTION VIEW OF SOD AND WILLOW/BRUSH FASCINE GRADE CONTROL STRUCTURE



Alkali Creek Incised Channel Restoration Project

Prepared for: Montana Office The Nature Conservancy

Prepared 2.20.16 by Scott Gillilan, Gillilan Associates

Modified 6.22.16

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